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Developing a toolkit for assessing the impact of health library services on patient care

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Developing a toolkit for assessing the impact of health library services on patient care

Report to LKDN (Libraries and Knowledge Development Network)

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TABLE OF CONTENTS

Executive summary	2
Acknowledgements	3
List of abbreviations	3
1 Introduction	4
1.1 Aims and scope	4
1.2 Objectives	4
1.3 Background	4
2 Methods	4
2.1 Approach	4
2.2 Project board	5
2.3 Sample	5
2.4 Questionnaire survey design	6
2.4 Interviews	7
2.5 Ethics and governance approval procedures	7
2.6 Implications for future studies	7
2.6.1 Planning time required for research projects	7
2.6.2 Differences among committees in their procedures	7
2.6.3 Protocols	8
2.6.4 Making use of help and advice available	8
3 Results	9
3.1 Response rate	9
3.1.1 Implications for future impact studies	10
3.2 Information needs	11
3.2.1 Implications for future impact studies	12
3.3 Resources used	12
3.3.1 Implications for future impact studies	14
3.4 Impact of information obtained	15
3.4.1 Implications for future impact studies	16
3.5 Information seeking behaviour	16
3.6 Comments on library services	17
Comments on collections and resource access	17
Preferences for electronic access	17
Use of library, general help and advice from library staff	18
Use of specialised library support and suggestions	18
Details about impact on practice	19
General comments on user satisfaction	19
Other comments concerning access and usage	19
Appendix 1 Questionnaire	21
Appendix 2 Modified questionnaire	25
Appendix 3 Interview schedule	29

LIST OF TABLES AND FIGURES

Table 1 Site distribution of questionnaires among staff groups	6
Table 2 Distribution of responses among sites	9
Table 3 Distribution of responses from different staff groups	10
Table 4 Purpose of search	11
Table 5 Type of information required	11
Table 6 Characteristics of information required	12
Table 7 Resources used	13
Table 8 Degree of success in obtaining information	13
Table 9 Time spent searching	13
Table 10 Views on librarian's assistance in search	14
Table 11 Immediate cognitive impact	15
Table 12 Contribution of information obtained to patient care outcomes	15
Table 13 Attitudes to information seeking	16
Table 14 Distribution of comments on library services	17

Executive summary

The **aim** of the project was to develop a toolkit for professionally led library services to assess the impact of the various services provided, including provision of electronic information, on outcomes that related to patient care.

The **objectives** were to:

- pilot and validate survey tools in a variety of services (including clinical librarian services as well as more traditional health library settings)
- evaluate the research processes, to provide sound advice in the toolkit.

KEY MESSAGES

Planning the project

Impact studies may usually be conducted as audit projects, and this avoids the need to obtain research ethics approval.

Advice from research governance staff is recommended, and research governance practice varies locally.

Human resources will do the random sampling of acute staff for you – but primary care staff need to be targeted in other ways.

Research design

Keep questionnaires short, check that the terms on any validated questionnaires will be interpreted as you expect.

Use a mix of questionnaire and interview.

Calculate the sample size required for your population and the confidence interval you wish for the questionnaire survey. If you do not have time to do a large survey, focus your impact survey on one or two staff groups – better to get a good response from one staff group than a poor response from all staff groups.

Use interviews to collect the details, and the stories, about the way in which information obtained via library service contributed to policy, guidelines, patient care, governance. Target teams, units, and practice development (in the widest sense) to make best use of interview time.

Conducting the research

Ensure that the accompanying documentation is clear, and indicates any benefits to the potential respondent of participation.

Simple descriptive statistics are adequate for assessing the impact, but when planning enhancement of services some synthesis and interpolation of the findings may be necessary. Leave space for some open-ended comments on the questionnaire.

Respondents find estimating the time spent on a search difficult, but such estimates help – together with other evidence – to justify the cost-effectiveness of a service.

Impact does not just affect the individual searcher as ‘advice to colleagues’, impacts on service delivery, and advice to patients indicate that information obtained may have long-term effects on practice and patient care.

Acknowledgements

The research team thank the LKDN for funding the study, and the various members of the Quality Group who have contributed in various ways to the project. Staff at the participating sites in Gwent, Blackburn, Preston and Leicester, particularly the librarian co-ordinators, human resources, and research governance provided assistance. We thank those who kindly agreed to help improve the interview schedule. Last but not least, we are grateful to the staff who returned questionnaires or took part in interviews. The range of views and comments expressed have been invaluable in guiding us in the design of a toolkit for other libraries to use to assess the impact of their services, and hopefully to enhance the design of services in the future.

List of abbreviations

COREC Central Office of Research Ethics Committees

LKDN Libraries and Knowledge Development Network

MREC Multi-centre Research Ethics Committee

NeLH National electronic Library for Health (now NLH)

NLH National Library for Health

REC Research Ethics Committee

SSA Site Specific Assessment

1 Introduction

1.1 Aims and scope

The aim of the study was to develop a toolkit for professionally led library services to assess the impact of the various services provided, including provision of electronic information, on outcomes that related to patient care.

At present library services find it difficult to marshal objective research evidence about the effectiveness of their services, and future funding for knowledge services will depend on a clearer understanding of their contribution to patient care. Guidance is necessary to ensure that libraries follow a sound methodology when replicating the methods, with some adaptations to their circumstances.

1.2 Objectives

The objectives were to:

- pilot and validate survey tools in a variety of services (including clinical librarian services as well as more traditional health library settings)
- evaluate the research processes, to provide sound advice in the toolkit.

1.3 Background

This project follows a systematic review of evidence on the impact of library services on patient care¹. Previous large scale national studies of the value and impact of health library services on patient care took place prior to the advent of the NeLH/NLH, and the toolkits developed in 1995/1997^{2 3} require revision to take account of changes in the type of services offered and the new user communities. In the past ten years, health library services in NHS Trusts have become multidisciplinary, and the organisational structures for funding and support have changed (several times). The NKS Review has established that the majority of NHS spend on knowledge services is on content rather than on dissemination. The study complements a study being conducted by Alison Brettle (EMPIRIC) that is specifically studying information skills training. The research complements the NLH study on user needs and funding flows and will aid understanding about user requirements and the skills and competencies needed to meet users' needs.

2 Methods

2.1 Approach

The proposed methods were a mix of quantitative and qualitative methods. A questionnaire sent to a randomly (but stratified) sample of professional staff at different types of NHS Trust would be followed up by interviews of volunteers from that sample to provide further details about their use of information provided through the library services.

¹ Weightman AL, Williamson J. (on behalf of the Library & Knowledge Development Network (LKDN) Quality and Statistics Group). The value and impact of information provided through library services for patient care: A systematic review. Health Info Lib J 2005; 22(1):4-25.

² Urquhart CJ, Hepworth JB. The value of information services to clinicians: a toolkit for measurement. British Library R&D Report, 6206. Aberystwyth: University of Wales Aberystwyth, Open Learning Unit, DILS, 1995. Available via <http://users.aber.ac.uk/cju>

³ Davies R, Urquhart C, Smith J, Massiter C, Hepworth JB. Establishing the value of information to nursing continuing education: report of the EVINCE project. BL RIC Report, 44. Boston Spa, Wetherby: British Library Document Supply Centre, 1997. Available via <http://users.aber.ac.uk/cju>

The aim was to develop a methodology to evaluate the value and impact of library services on patient care. The systematic review concluded that impact studies should be conducted with objective research principles firmly in place (e.g. random sampling of the potential user population, with researchers independent of the library service, use of critical incident techniques to reduce recall bias).

2.2 Project board

The project team was led by Christine Urquhart and Alison Weightman, and the Project Board (LKDN quality and statistics panel) included Linda Riley, Mandy Beaumont, and Linda Ward, who have all had experience in conducting impact surveys. The LKDN project convenor was Pam Prior.

2.3 Sample

The sites originally selected represented different types of library service. These were:

- District general hospital
- Shared services model (across several Trusts)
- Clinical librarian service
- NHS-HE service, within a University Hospital
- Public health/commissioning support

Unfortunately, the NHS-HE service could not participate in the end, and the clinical librarian service (at the time of writing) could not participate as approval for research governance was not granted in the timescale for the project.

The staff groups were stratified as follows:

1. Consultants (medical & dental)

Other medical & dental staff , specialist registrars, staff grade, SHOs / FY1, FY2

2. GPs

3. Qualified nursing, midwifery & health visiting staff working mainly in acute sector

Qualified nursing, midwifery & health visiting staff working mainly in community sector

4. Qualified scientific, therapeutic & technical staff (including eg healthcare scientists, therapists, pharmacists)

5. Qualified ambulance staff

Support staff

Senior managers

Other administrative staff

A five per cent sampling scheme was applied to each staff group surveyed at a site. Statistical advice suggested that for a population of 2000, 95% confidence and an interval

of plus or minus 10% (if 25% said yes, the whole population could be estimated as 25% plus or minus 10%, with 95% confidence) then a sample size of 92 would suffice, and for larger sample sizes the sample size required would be larger, but not that much larger (e.g. 95 for a population of 12000).

Questionnaires were distributed as indicated for each site (Table 1). Notably, no GPs or practice staff were recruited, but this reflects the way the sampling and distribution was managed, mainly via acute hospital human resources departments, who could only handle their own employees.

Staff group	A	B	C	D
1 medical and dental		31	24	130
2. GPs	0	0	0	0
3. nursing, midwifery and health visiting		105	93	138
4. scientific, therapeutic & technical		25	48	13
5. managers and administrative staff, ambulance staff	95	62	67	

Table 1 Site distribution of questionnaires among staff groups

2.4 Questionnaire survey design

The questions were discussed with the project board and the project consultant. The final version (Appendix 1) was altered slightly for use at a site in Wales (Appendix 2). A critical incident approach was used to help the respondents focus on a particular occasion of information need and use.

The introductory section asked for demographic information about staff group.

Question 1 asked respondents to think of one occasion during the past two weeks when they wanted information related to clinical decisions, and to indicate why (from a list of choices) they needed the information. Question 2 asked about the format of the information required. For example, was the required information technical (confirmation of diagnosis), or policy guidelines, or information for a patient?

Question 3 asked about the type of information the respondents were hoping to find, distinguishing between the very latest information, background information, methods used or commentary on results obtained. Question 4 asked about the resources used to answer the question (and this question was altered for the site in Wales to reflect the different range of resources available). A category in this question asked if the respondent had asked a librarian to do the search for them.

Question 5 moved on to the degree of perceived success in obtaining information for the question. Question 6 asked about the immediate cognitive impact, how much the information obtained confirmed or added to the respondent's existing knowledge, and whether the results would 'save time' or be shared with colleagues.

Question 7 asked for more details about the possible help from a librarian in the search, and how this help would be rated. Question 8 asked about the time spent on the search.

Question 9 asked about the likely clinical impacts, the impact on patient care of the information obtained.

Question 10 asked about information seeking habits, perceptions of confidence and competence, and use of library services.

Of these questions, Questions 6 and 9 were based on questions used in previous impact studies, such as the Value project and EVINCE project. Similarly, questions 1 and 4 were based on previous impact surveys but updated to include a range of electronic resources and specialised resources not available ten years ago. Question 7 was intended, partly, to

examine perceptions of the usefulness of clinical librarian services of the 'clinical question answering' variety.

At the end of the questionnaire, respondents were asked to provide contact details if they were willing to be contacted for interview. Only three volunteered, and of those, one email bounced and two never replied to the request for interview.

2.4 Interviews

A draft interview schedule was piloted in August-October 2007, with a convenience sample of a nurse, nurse manager, consultant (also a postgraduate training co-ordinator) and a biomedical scientist, from SW England. The final version (Appendix 3) reflects changes made to shorten the number of questions, make the questions more relevant to current policy and practice concerns, and ensure a logical order of questions that also reflect that way most health professionals will search for information.

2.5 Ethics and governance approval procedures

The COREC application was prepared as soon as provisional agreement was secured on the five sites. Changes were made to the COREC application form over Summer 2005, requiring some extra work in September 2005. We chose to submit to the first available Multi-centre Research Ethics Committee (MREC), in an effort to keep to time on the project. The application was routed to Thames Valley MREC on 26 October 2005, and the approval was received on 15 December 2005.

The research governance arrangements at the sites varied, but approval was finally granted by Site A on 23 January 2006, from Site B on 10 January 2006, from Site C on 6 December 2005, and from Site D on 30 October 2006.

2.6 Implications for future studies

The project was conducted as a research project rather than an audit project, although it does not involve 'medical research on human subjects' (Declaration of Helsinki, 2000). Whether ethical approval is necessary or not, governance approval remains a necessity in most situations, to ensure that official permission is obtained to conduct a large scale questionnaire among staff.

Obtaining interviews via a request on a questionnaire does not seem a very productive approach. Unfortunately, other approaches to the sampling are likely to be biased. It may be possible to randomly sample departments, and then randomly select staff from the allocated departments. Inviting a random selection of staff would be less biased than approaching known users of library services (via Athens registration or use of other library services).

2.6.1 Planning time required for research projects

The timescale for this research was lengthy, and the initial project timetable proved rather optimistic, particularly as it is difficult to be proactive in dealing with the committee secretaries involved. As such committees do not always check the proposed deadline of project, and delays in obtaining ethical approval and research governance are likely, it is best to be pessimistic about the completion so that the project over-runs do not exceed the approval period for the project work. It is necessary to keep to timetables of individual committees (ethical and governance). Any substantial amendments, particularly to ethical application, have to be re-approved and therefore this adds to the time. However, if changes are deemed 'minor', then only rubber stamping by committees is necessary.

2.6.2 Differences among committees in their procedures

Governance committees' submission procedures are different and therefore timescales different. The deadlines for deliverables are therefore partly dependent on research governance conditions at individual sites. In hindsight, the ethics committee approval was

the easy part, as booking in MREC was carried out through the Central Allocation System administered by COREC for applicants to be reviewed by recognised RECs. It is possible to choose a particular MREC or take the next available committee which can be some weeks ahead from time of booking. This saves time, but there is no alternative to going through the local research governance procedures, which can be very lengthy.

Documentation was submitted to one research governance unit in January 2006, and the decision was not available by mid June 2006, and finally granted at the end of October, nine months after date of submission. This meant that the questionnaire was distributed in November – chiming in with pre-Christmas rush, which is not an ideal time to distribute a survey.

Knowledge and experience obtained at one site is not necessarily transferable to other R&D departments, as procedural criteria differ from site to site. For example, three of the four sites we dealt with, accept both ethical and governance applications and consider and approve governance applications pending obtaining ethical approval. The remaining site did not require governance application until ethical approval obtained. A great deal of 'further information' is required.

2.6.3 Protocols

Confidentiality concerns generally required the involvement of HR departments to undertake the sampling and the distribution of questionnaires, and this was stipulated in MREC approval letter. The involvement of yet another Trust department can take time if, for example, the sole person to carry out sampling works part time and is on holiday when the distribution was planned.

It is easy to overlook the obvious when completing the COREC form, such as a small pilot of the questionnaire, but if not specifically noted in the application form then the pilot has to be omitted. The default expected in the NHS is the use of validated instruments, another reason for using tried and tested impact assessment methods.

2.6.4 Making use of help and advice available

It is necessary to work closely with R&D managers & co-ordinators in Trusts involved, and use any help available from individual managers and co-ordinators. This lessens the need for 'further information', saving time and helping to keep to deadlines.

In particular, it is useful to ask for advice on the use and correct understanding of terminology as even the glossary is aimed at clinical trials with and for external drugs companies and their agent companies. For our project, we queried whether SSAs (Site Specific Assessments) were necessary. If not then we could manage with a Chief Investigator (CI) with coordinating responsibility for all sites, and local librarians are 'local collaborators' – 'undertaking certain types of straightforward research procedure, not requiring the appointment of a Principal Investigator and a site-specific assessment'.

Our advice is to:

- Read guidelines closely.
- Consult GAfREC (Governance Arrangements for NHS Research Ethics Committees)(on website) as these are useful for clarification
- Consult the Standard Operating Procedures for Research Ethics Committees (SOPs), issued by COREC guidance to clarify whether SSA exemption is applicable.
- Conform to COREC procedures at all times. When completing application form (electronic only) keep an eye on COREC website for revisions. Use guidelines, glossary, all available on website.
- Look ahead. Ensure that accompanying documentation is obtained in parallel with completing application. Read the checklist. Obtaining sponsor and funder letters etc can take time.

- Ensure local collaborators understand their role and responsibilities within the project. As this project does not require Site Specific Assessments (SSA) contacts are 'local collaborators' not researchers, and this would be similar for future impact studies of this nature.

3 Results

3.1 Response rate

The highest response rate came from the smallest site (Table 2). There are several possible reasons for the higher response from one site. First, a covering letter could be included at that site, and that meant that the degree of personalisation was better. Second, the smaller site may be also be associated with a higher visibility for the library services. The implications are not good for further work on assessing the impact of electronic information services as these may simply be accepted as something that is there, and the degree of management and organisation required, by library services, to get the resources to the user, not apparent.

	A	B	C	D	TOTAL
No. Quest sent	95	223	232	281	831
Responses	46	44	40	39	169
No. Blanks and late	1	5	5	2 (plus 2 late)	15
% Response	48.4%	19.7%	17.2%	13.9%	20.3%

Table 2 Distribution of responses among sites

Both factors, personalisation and site coverage, do seem to influence response rate to some extent. Table 3 indicates a good response from senior managers, but 87% (20/23) of these responses came from site A, and the library service there is aimed at such staff. The total response rate is not very representative of the health service staff, as general practice staff are not represented at all. This is a consequence of the way the research ethics procedures worked, as sampling had to be done via the Human Resources Departments, responsible for acute and community NHS trust staff only. The survey work for Site D was conducted over the Christmas period and the low response there could be attributed to timing, for reasons beyond the control of the research team.

As far as traditional user groups are concerned, the response from consultants was better than might be predicted on the basis of their population numbers within the workforce (1.6% of sample, 7.7% of responses). Consultants form 2.3% (30,650/1,331,857) of the NHS staff population and 4.6% (30,651/660,706) of the qualified professional NHS staff. The response rate for other medical and dental staff was similar (1.1% within the original sample, 10.1% of responses, compared to 3.9% (52,301/1,331,857) of the NHS staff population, and 7.9% of the qualified staff). The response rate from nurses is higher than might be expected from the acute sector, but lower than might be expected from the community sector – on the assumption that there are around twice as many qualified nursing (and midwifery, health visiting) staff working in the acute sector as in the community sector. For 59 responses from the acute sector one would expect around 25-30 responses but only 14 were obtained. In total 73 responses (43.2%, 73/169 responses) were obtained from qualified nursing, midwifery and health visiting staff, compared to the nurses' proportion, 29.8% (397,515/1,331,857) of the NHS staff population, and 60% (397,515/660,706) of the qualified professional staff. The scientific, therapeutic and technical staff representation (2.3% in original sample, 11.2% of responses) compares to 9.5% (126,883/1,331,857) of all NHS staff and 19.2% (126,883/660,706) of qualified professional staff. Managers and senior managers formed 2.9% of the original sample, but 14.2% of the responses. This compares with their proportion of all NHS staff (2.8%) (37,726/1,331,857) and qualified professional staff (5.7%).

In summary, the responses are weighted towards managers and hospital nurses. Unsurprisingly, across the sites surveyed, consistent responses were obtained from the groups that generally have enjoyed easiest access to hospital-based library facilities – hospital medical staff, hospital nurses. Among the qualified staff, responses were poorer than expected from the scientific, therapeutic and technical staff (including pharmacists) although it is possible that some groups of staff within that category use their own professional information services.

No site included a very active outreach service that could specifically be included in the survey, and the lack of responses from GPs and ambulance staff reflects that omission.

Type of respondent		TOTAL	%TOTAL n=831	% TOTAL n=169	NHS workforce Statistics 2004 ⁴ % of all staff (% of qualified staff)
1 st	Acute sector qualified nursing, midwifery & health visiting	59	7.1	34.9	
2 nd	Senior managers & managers	24	2.9	14.2	2.8 (5.7)
3 rd	Other admin staff	20	2.4	11.8	
4 th	Qualified scientific, therapeutic & technical staff including pharmacists	19	2.3	11.2	9.5 (19.2)
5 th	Other medical & dental staff (Specialist Registrar, Staff Grade, SHO)	17	2.0	10.1	3.9 (7.9)
6 th	Community sector qualified nursing, midwifery & health visiting	14	1.7	8.3	
7 th	Consultant (medical & dental)	13	1.6	7.7	2.3 (4.6)
8 th	Support staff	2	0.2	1.2	
9 th	GPs	0	0	0	
9 th	Ambulance staff	0	0	0	
9 th	GP practice staff	0	0	0	

Table 3 Distribution of responses from different staff groups.

3.1.1 Implications for future impact studies

Some respondents will not complete demographic details, and other respondents will tick more than one category, as they may (genuinely) have more than one type of role. The question can be phrased as 'what is your main work role' but even then, it is quite likely that there will be some double counting. In this study, five respondents did not complete demographic details and several checked more than one category. The final total looked like 173, but was in fact 169.

The results suggest that obtaining representative responses from staff groups is difficult. For individual library services, it may be better, and easier, to focus on one or two staff groups and ensure that representative sampling is obtained for those groups. At the time the survey work was conducted, Primary Care Trusts were being restructured in England, and that did not help the survey work at all. The primary care and community sectors remain difficult to target. It is encouraging to note that reasonable responses were obtained from the community nursing and therapeutic, scientific and technical staff groups, as that in itself indicates that the library services are reaching out to a multidisciplinary audience.

⁴ Department of Health. NHS workforce statistics (England). 2004, retrieved from <http://www.dh.gov.uk> , June 18, 2006.

3.2 Information needs

The profile of information needs reflects the preponderance of senior managers among the respondents, with a high proportion looking for information to support service development or planning.

Nearly half of all searches were related to direct patient care. Searching is also motivated by individual needs for CPD, personal research or personal interests.

Information Need		Total	% Total n=831	% Total n=169
1 st	Direct patient care	78	9.4	46.2
2 nd	Personal research	37	4.5	21.9
2 nd	CPD related	37	4.5	21.9
4 th	Personal interest	34	4.1	20.1
5 th	Service development & planning	32	3.9	18.9
6 th	Clinical governance/guideline development	27	3.2	16.0
7 th	Teaching/Supervision	24	2.9	14.2
8 th	Audit	18	2.2	10.7
9 th	Legal/Ethical issues	12	1.4	7.1
10 th	Funded Research	8	1.0	4.7
	Other	6	0.7	3.6
	<i>Blanks (no details provided)</i>	14	1.7	8.3

Table 4 Purpose of search

Procedural information is frequently required, with around one in three searches involving guidelines, and one in four searches involving policy documents (Table 5).

It is interesting that 'best practice' or service improvement information is required frequently, but this may partly reflect the preponderance of managers among the respondents. Drug information resources are, however, plentiful, information on service improvement less easy to find.

Type of Information		TOTAL	% TOTAL n=831	% Total n=169
1 st	Guidelines on management of illness/condition	58	7.0	34.3
2 nd	Specific drug or therapy related	45	5.4	26.6
3 rd	Policy documents	43	5.2	25.4
4 th	Information for a patient	25	3.0	14.8
5 th	Good practice/service improvement/benchmarking	23	2.8	13.6
6 th	Other	22	2.6	13.0
7 th	Confirmation of initial diagnosis	18	2.2	10.7
8 th	Contact/organisational details	11	1.3	6.5
	<i>Blanks (no details provided)</i>	14	1.7	8.3

Table 5 Type of information required.

In general, respondents were looking for current, up-to-date information on their topic, suggesting that summaries of the latest news would be their ideal format, rather than lots of background information (Table 6). Digests that place the information in context, with some reference to the background might be helpful.

Info hoping to find		TOTAL	%TOTAL n=831	% Total n=169
1 st	Most recent information on subject	103	12.4	60.9
2 nd	Information on methods used	58	7.0	34.3
3 rd	Background information	58	7.0	34.3
4 th	Information on results obtained (incl. adverse results)	46	5.5	27.2
5 th	Other	10	1.2	5.9
	<i>Blanks (no details provided)</i>	13	1.6	7.7

Table 6 Characteristics of information required

3.2.1 Implications for future impact studies

Future questionnaires might consider reducing the number of categories and sets of questions. We have examined some correlations between the answers.

For example, for one site:

'clinical governance/guideline development' category : 8 responses (information needs question)

Of those eight responses:

5 respondents ticked both 'guidelines' and 'policy documents' in the type of information required

2 respondents ticked only guidelines

1 respondent ticked only policy.

While this demonstrates internal consistency of response in the current questionnaire, it also means that some questions might be rephrased and categories tidied up to remove redundancy. However, for another site, there was a distinction made between 'guidelines for management of illness/condition' (17 responses) and clinical guideline development as an information need (2 responses). At that site the predominant purpose associated with guidelines for management of an illness or condition was direct patient care.

Other categories had a more varied spectrum. For example, although 'information for patient' (type of information required) was often associated with 'direct patient care', it was also associated with clinical governance/guideline development (as it should be for development of integrated care pathways), teaching/supervision, personal interest, and personal research. This profile seems reasonable, and to be expected.

The questionnaire was designed by a group of people, which has the advantage that items are not missed, but inevitably means that the questionnaire is too long. The simplest way of dealing with questions that probe the type of information required is to leave such questions to a follow-up interview (or interview survey) of a smaller sample. If terminology is difficult to standardise across the country for a questionnaire, then such questions could be left to an interview, to ensure that full details are required and the answers are clear.

3.3 Resources used

Inevitably, perhaps, search engine searches predominate. Reliability and convenience seem to matter, judging by preferences for formal resources (reference books) and informal resources (colleagues). The use made of the health library website corresponds to the use of e-journals, but access to the e-journals is not necessarily made through the library website. More respondents used e-journals, than had apparently used the library website as those who did. This could indicate that they did not recognise that their route of access was through the library website, but it could also mean that they have bookmarked journal sites, or find the journal through a search engine search.

A common pattern was combining a search engine search with asking a colleague, and other resources used as well as asking a colleague included library websites, e-journals, or personal collections. Databases were often used as part of a more extensive search involving a range of resources. They were very rarely the only resource used, more often combined with use of the library, or library website or e-journals or search engines, or colleagues, or a mix of those resources.

Other resources used included local University libraries and the Department of Health website.

Resources used		TOTAL	%TOTAL n=831	% Total n=169
1 st	Internet (search engine/Google)	114	13.7	67.5
2 nd	Colleagues	59	7.1	34.9
3 rd	Reference/textbooks, manuals	53	6.4	31.4
4 th	Databases e.g. Medline, Cinahl	52	6.3	30.8
5 th	E-journals e.g. Lancet, BJN	33	4.0	19.5
6 th	Local health library	31	3.7	18.3
7 th	Personal journal, book collection	30	3.6	17.8
8 th	Health Library Website	23	2.8	13.6
8 th	HOWIS e-library (Wales)	23	2.8	13.6
9 th	NeLH/National Library for Health (England)	11	1.3	6.5
9 th	Other	11	1.3	6.5
11 th	Other library (specify)	10	1.2	5.9
12 th	Ask a librarian to search	9	1.1	5.3
13 th	E-textbooks	7	0.8	4.1
14 th	Other e.g. Strategic Health Evidence Manager	6	0.7	3.6
	Blanks (no details provided)	13	1.6	7.7

Table 7 Resources used.

The critical incident technique may encourage respondents to recall more extensive searches, and that might account for the fact that over a quarter of respondents noted that the information was still incomplete, and that around a quarter of the respondents had searched for more than an hour, although most had spent less than 30 minutes (Table 9). Under half reported that they had found everything they required (Table 8). More than ten per cent were unable to provide any details on the time spent searching, and ten per cent gave no details about the resources used in a search.

Successful in getting information		TOTAL	% TOTAL n=831	% Total n=169
1 st	Wholly	69	8.3	40.8
2 nd	Partly - information incomplete	51	6.1	30.2
3 rd	Partly – time restraints/will try again	44	5.3	26.0
4 th	Not at all	1	0.1	0.6
	Other	0	0.0	0.0
	Blanks (no details provided)	15	1.8	8.9

Table 8 Degree of success in obtaining information

How long did search take?		TOTAL	% TOTAL n=831	% Total n=169
1 st	Between 10 and 30 minutes	59	7.1	34.9
2 nd	More than an hour	41	4.9	24.3
3 rd	More than 30 minutes but less than an hour	26	3.1	15.4
3 rd	Less than 10 minutes	25	3.0	14.8
	Blanks (no details provided)	20	2.4	11.8

Table 9 Time spent searching

The majority of respondents at the sites had not asked a librarian for help with the search. If they had, most perceived that a search by the librarian would provide more- and better information, as well as saving some time (Table 10). These two reasons appear to cover most of the reasons for asking a librarian to do a search as the respondent who ticked the other category indicated that the reason was greater expertise of the librarian of the resources that would be appropriate for the topic.

Did you ask a librarian to do search	TOTAL	% TOTAL n=831	%Total n=169
No	135	16.2	79.9
Yes	23	2.8	13.6
<i>Blanks (no details provided)</i>	13	1.6	7.7
Improve amount/quality of information	21	2.5	12.4
Save time	16	1.9	9.5
Other	1	0.1	0.6
<i>Blanks (no details provided)</i>	1	0.1	0.6

Table 10 Views on librarian's assistance in search

Unfortunately, the number of responses for librarian-assisted searches precluded estimates of any statistical significance of any differences in attitudes towards the benefits of a librarian search between sites served by a clinical librarian, and sites that did not offer such services. A chi-squared test was not reliable as a cell size figure for the expected frequency was less than five. As the EMPIRIC study⁵ notes, the definition of a mediated search often shades into a tutorial with the health professional on searching, as well as providing assistance with a search. Although not formally providing a clinical librarian service, some library services may provide team support that is, in effect, not very different from the aims and objectives of formal clinical librarian services. The emphasis may be on promoting clinical librarian services as a norm, not as a specially funded outreach service.

3.3.1 Implications for future impact studies

The indications are that the resources supplied through the library are used for the more extensive searches that may accompany investigations about new service delivery, or queries about existing practice by a clinical team. Obtaining examples of the contribution of the library services to service improvement may require identifying how resources were located for a particular need, and how the librarian's professional expertise contributed to the retrieval and appraisal of information. Essentially an impact study needs to examine situations where clinical librarian expertise was required and used, even if there was no designated clinical librarian involved. Situations in which clinical librarians work such as clinical teams developing guidelines, journal clubs, and support of clinical governance activities are the most likely situations to find identifiable examples of impact on patient care. Unfortunately, it may need some period of time to accumulate a sufficient number of searches (and feedback) for meaningful statistical analysis.

Getting time estimates from respondents may be difficult as the number of missing responses to this question (Table 9) indicates that respondents find it hard to provide such information. If the main impact of a librarian's contribution is the improved quality of the search output as well as saving professional time, that may help to put any cost benefit analysis on a stronger footing.

⁵ Brett A, Hulme C, Ormandy P. Effective Methods of Providing Information for patient Care (EMPIRIC project). Report Three. Data collection & analysis Phases Two and Three. Salford: University of Salford HCPRDU, 2005.

The critical incident technique may be used to help library staff understand how clinicians are searching, for example, for evidence in relation to clinical governance.⁶ Assessing impact should be one part of understanding how information behaviour is changing and how library services should respond.

3.4 Impact of information obtained

Despite perceptions that more information could be found, most respondents were happy with the quality of the information they had obtained. Most had located relevant, up-to-date information that was, on the whole, accurate and had provided new knowledge for over half the respondents, and had confirmed existing knowledge for nearly half. Nearly two thirds of the respondents would share the information found with colleagues. Few had found little or nothing of clinical value. However, 7.7% of the respondents to the survey did not complete this question. Under a third indicated that the search would 'save time'.

Immediate impact of info on knowledge		TOTAL	% TOTAL n=831	% Total n=169
1 st	Relevant	146	17.6	86.4
2 nd	Current	112	13.5	66.3
3 rd	Will share information with colleagues	109	13.1	64.5
4 th	Accurate	103	12.4	60.9
5 th	New knowledge	94	11.3	55.6
6 th	Refreshed memory for details/facts	85	10.2	50.3
7 th	Substantiated prior knowledge/belief	76	9.1	45.0
7 th	Better informed clinical decisions	76	9.1	45.0
9 th	Contributed to higher quality of care	69	8.3	40.8
10 th	Saved time	52	6.3	30.8
11 th	Little or nothing of clinical value	12	1.4	7.1
12 th	Other	5	0.6	3.0
Blanks (no details provided)		13	1.6	7.7

Table 11 Immediate cognitive impact

How might information contribute?		TOTAL	% TOTAL n=831	% Total n=169
1 st	Advice to colleagues	92	11.1	54.4
2 nd	Advice to patient/carer	76	9.1	45.0
3 rd	Changes to service delivery or practice	64	7.7	37.9
4 th	Revision of clinical pathway or guidelines	43	5.2	25.4
5 th	Improved quality of life for patient/family	40	4.8	23.7
6 th	Choice of drug therapies	29	3.5	17.2
6 th	Minimisation of risks of treatment	29	3.5	17.2
8 th	Legal or ethical issues	27	3.2	16.0
9 th	Choice of diagnostic tests	21	2.5	12.4
9 th	Confirmation of proposed drug therapies	20	2.4	11.8
10 th	Choice of non-drug therapies	12	1.4	7.1
11 th	Other	11	1.3	6.5
Blanks (no details provided)		15	1.8	8.9

Table 12 Contribution of information obtained to patient care outcomes

The findings concerning the contribution to patient care reflect the concerns of senior managers among the respondents. The major impacts included changes to service delivery or practice, and revision of guidelines, as well as working with colleagues to

⁶ Publicover M, Giles G, Bolton B, Shemilt C, Urquhart C. Listening to our clinical colleagues: how are they finding their evidence to support Trust clinical governance. *Health Information and Libraries Journal* 2006; 23 (Suppl 1): 57-61.

implement those changes (advice to colleagues). Interestingly, 76 respondents indicated that the information obtained would contribute to information or advice to a patient or carer, although far fewer (25) had indicated that they were expressly looking for information for a patient.

Advice to colleagues was most commonly associated with advice to patients or carers, followed by impact on changes to service delivery, and then confirmation or choice of therapy (drug and non-drug therapies), minimisation of risk and ethical issues. These patterns suggest that patient-led service improvement is more than a policy aspiration, as advice to patients figures so highly and is also associated with advice to colleagues.

3.4.1 Implications for future impact studies

The pattern of impacts identified (with further confirmation in the comments, Section 3.6) suggest that examples of impact could be found in the library's support of clinical governance activities, commissioning or service delivery improvements. Such support may not be obvious to the library service, unless librarians are actively involved. The pattern of impacts suggests (as in 3.3.1) that clinical governance activities provide good opportunities for identifying impacts. The pattern of impacts also suggests that such situations could be used to investigate how to enhance library service support for clinical governance and service improvements.

3.5 Information seeking behaviour

Over half the respondents prefer to do their own searching and most of those feel competent to do so. Less than a third visited the library, and even fewer seemed able to indicate the frequency of such visits, with some comments indicating that usage was occasional, as and when required. Strangely, even fewer claimed to use the library website. A minority (16%) prefer asking the librarian to search on their behalf (Table 13). It was possible to do a chi-squared test to examine whether there was any difference between the site served by a clinical librarian service and the other sites on a preference for a librarian to do a search. There was no difference ($n=169$, $p=0.16$, chi-square 1.95).

The findings, and comments (Section 3.6) confirm that time pressures mean that many staff find visits to the library very difficult. Expectations have increased, particularly for staff who have recent experience of higher education and access to a wide variety of e-content.

Opinions on information seeking		TOTAL	%TOTAL n=831	% Total n=169
1 st	I prefer to do my own searching	103	12.4	60.9
2 nd	I feel competent at searching	84	10.1	49.7
3 rd	I visit the medical/health library	53	6.4	31.4
	Monthly	15	1.8	8.9
	Weekly	6	0.7	3.6
	Other	10	1.2	5.9
	Occasionally	7	0.8	4.1
	Daily	1	0.1	0.6
4 th	I work with colleagues to search	47	5.7	27.8
5 th	I use the library website	38	4.6	22.5
	Weekly	17	2.0	10.1
	Other	6	0.7	3.6
	Daily	1	0.1	0.6
	Monthly	2	0.2	1.2
6 th	I usually need information urgently	37	4.5	21.9
7 th	I prefer to ask the librarian to do the search	27	3.2	16.0

Table 13 Attitudes to information seeking.

3.6 Comments on library services

Encouragingly, over one third of respondents offered comments on the library services, and most of those were positive. The comments indicate that the Internet (in general) may be seen as the alternative to the physical library.

Time constraints recur as a theme. Perceived lack of time affects willingness to come to the physical library, leading to a preference for electronic resources, and some unwillingness to ask library staff for assistance. On the other hand, for the larger and more complex searches, librarian input is valued as being cost-effective and providing a good quality search. Trust is necessary, with several comments indicating that knowing or getting to know the librarian was useful. If visits to the physical library decline, the development of trust can only be achieved through outreach work. This allows the librarian to meet users in the clinical areas or at meetings, or to work in education and training settings with health staff.

Comments on library services	TOTAL	%TOTAL IN AREA	% TOTAL n=831	% Total n=169
Site A	19	42.2%		
Site B	14	6.3%		
Site C	12	5.2%		
Site D	14	5.0%		
TOTAL	59		7.1%	34.9

Table 14 Distribution of comments on library services

Comments on collections and resource access

More specialised resources for OTs are required including conditions and relevant treatment modalities used that have been effective.

Material available in library limited for my speciality - intensive care/anaesthetics

Some resources in library is outdated

The hospital library service has good medical resources but lacks nursing books/resources

For more obscure/international articles, the library service is invaluable.

Access to archived, as well as up-to-date information

I always use the internet, but at times we need books (e.g. Drug calculations) to help colleagues.

Preferences for electronic access

Inconvenient to visit hospital library due to poor parking & hours of opening (Night staff - much more convenient to search web for general information. However, library able to offer more in-depth information & study information on specifics.) Due to work commitments and the hours I work, I find visiting our local library time consuming. I prefer to use the Internet.

Library service very good but not always possible to leave clinical area to obtain information. Therefore, Internet preferred.

It is not practical to search books in an urgent situation, but e-library services can provide a better result in less time

Full text access is essential. Currently completing post-grad research and have found my Athens password provided by the University to be superior to the Athens access provided by my Trust

Helps to keep me updated and my care relevant and up-to-date. I work in theatres in anaesthetics & recovery & we have access to the Internet & Intranet in every anaesthetic room and in each bay in recovery. I feel this plays a vital part in patient care as questions, queries and debates can be settled promptly by using these resources without leaving the patient. Students also find it a useful resource. Guidelines policies & information for patients can be obtained, along with research for personal use. Courses are always available within the library setting to update or renew IT skills.

Use of library, general help and advice from library staff

I have used the library whilst undertaking coursework in 2003 found the facilities to be of use. Librarians there also searched for videos and books for me.

Librarian usually very helpful.

[name] is invaluable to me. This q'aire came on one of the weeks that I hadn't accessed her services

An excellent resource. Staff able to point you in a direction to find relevant information or sometimes will do your search for you

Whenever I have used the service I have found the library staff extremely helpful.

Teaching: I generally use electronic sites but would prefer to visit a library to look at the shelves - this I feel with the help of librarian (if required) gives a big overview i.e. you find things you did not expect to broaden your outlook -whilst in theory electronic sites should give a more comprehensive view, it is so time consuming. Patient Support: Sorry I digress - librarians are extremely valuable in providing information for patients, and healthcare workers and will continue to contribute to clinical governance and patient issues forums and personal development

Contribution invaluable as will often find supplementary information which provides greater depth/breadth of particular subject/issue

Library services seem to work if you know the librarian. Our [name] is excellent

Fantastic resource to me & whole department - the librarian is amazing [name] a brilliant resource - particularly for benchmarking/services

As I am a relatively new member of staff I have found the library a good place for information required. The staff have searched for previous information and delivered within 2 days

I have not been to the library in the last 2 weeks. Information given is when I was on my course last year. I found the library very good. The staff were very helpful

Use of specialised library support and suggestions

Only recently met with [name] and now realise what value this can bring to evidence-based management - lots of info and resources already - I think this will be invaluable

For large and complicated/time consuming data retrieval/searching, the clinical librarian is essential. However, day to day clinical questions can often be answered by my own searching.

Although I am aware of where information can be accessed, I rarely have the time to enable me to search for good practice etc., especially as I cover 5 district services. Having a resource like the [name] is vital, as I can explain my needs and know that on an on-going basis I will receive info that can help in service planning and modernisation

Would be useful to have a hotline - need information within 1 hour usually

Very professional & helpful. Important part of the clinical decision making team.

Generally I undertake my own lit searches but would consider asking for librarian to assist if time became serious issue. Know many who have used service and very happy with it.

Details about impact on practice

Regarding my situation, I was looking for a policy within my local Trust to help answer a question from a student to use as part of her evidence. Upon searching I realised there was no local Trust policy guiding us in practice, even though our practice was in fact correct. After using library resources I am now in the process of devising a local Trust policy using research based evidence.

Looking to develop guidelines for anaphylaxis? To support education/training for parents/carers

General comments on user satisfaction

Library services are absolutely essential to continuing professional development, policy making and teaching

Good when undertaking courses

I am a M1 Pharmacist so have access to majority of resources I need to answer enquiries I receive from Drs, nurses. The library service does help in finding references, ensuring databases are provided etc.

I have found that the health library also provide a prompt service

Sorry I've only ticked one box. I am Admin staff and never need to use the library services. I use a computer all day. Therefore all your questions are irrelevant. Several years ago I worked at the medical library. I found it to be very quiet and in my opinion should have been utilised much more than it was.

I think the library service & [name] are useful but under utilized resources (speaking for myself of course) I will consider utilizing these services better in the future

Library Service extremely efficient, useful and used to its full potential by myself.

Library Service is a vital resource for information to inform practice.

Library is a useful resource.

Other comments concerning access and usage

Unsure if we can use the nursing library if not on course?

I very rarely use the library due to restrictions of personal time.

Often my info needs are urgent or for a short deadline, so I often do not have time to do a full library search or involve others/seek help

I should ask for help more often but usually I need info immediately and so forget to ask for non-urgent needs.

Further awareness of this service needs to be highlighted as you can forget it exists

Although I regard the library as an important and necessary resource, I very rarely have the need to use the facility.

I usually need information at short notice. However when time is not short the library service are very helpful

When I need info, use the Internet because I need it quickly and I don't have time to visit library. I am sure I would get more relevant info from library but it is not practical.

As I am a bereavement officer at [name], I am not sure if my comments are relevant to what you need.

Since I am a medical library assistant I cannot help but feel that this survey was inappropriate for me.

I usually work nights to do personal research

Appendix 1 Questionnaire

IMPACT STUDY OF LIBRARY AND KNOWLEDGE SERVICES ON PATIENT CARE – QUESTIONNAIRE

PLEASE COMPLETE AND RETURN IN THE READY ADDRESSED ENVELOPE BY

TICK ALL RELEVANT BOXES AND/OR WRITE A FULLER ANSWER UNDERNEATH EACH QUESTION

Which best describes your job?

- | | |
|--|-----|
| Consultant (medical & dental) | [] |
| GP | [] |
| Other medical & dental staff (Specialist Registrar, staff grade, FY1,FY2) | [] |
| Qualified nursing, midwifery & health visiting
staff working mainly in acute sector | [] |
| Qualified nursing, midwifery & health visiting
staff working mainly in community sector | [] |
| Qualified scientific, therapeutic & technical staff (incl.
eg healthcare scientists, therapists, pharmacists) | [] |
| Qualified ambulance staff | [] |
| Support staff | [] |
| Senior managers & managers | [] |
| GP practice staff | [] |
| Other admin. staff | [] |

Please think of one occasion during the past two weeks when you needed information related specifically to clinical decisions and then answer the following questions.

1. Why did you need the information?

- | | |
|---|-----|
| For direct patient care | [] |
| For clinical governance/guideline development | [] |
| For audit | [] |
| For service development & planning | [] |
| For legal/ethical issues | [] |
| For personal research | [] |
| For research (funded) | [] |
| Continuing Professional Development related | [] |
| For personal interest | [] |
| For teaching/supervision | [] |
| Other | [] |

2. What type of information did you need?

5. Were you successful in obtaining the information?

[illegible][illegible]

It may help – or did help- in...

(N.B. this version is not the original format)

Appendix 2 Modified questionnaire

IMPACT STUDY OF LIBRARY AND KNOWLEDGE SERVICES ON PATIENT CARE QUESTIONNAIRE

PLEASE COMPLETE AND RETURN IN THE READY ADDRESSED ENVELOPE BY
.....

TICK ALL RELEVANT BOXES AND/OR WRITE A FULLER ANSWER UNDERNEATH EACH QUESTION

Which best describes your job?

Consultant (medical & dental)	[[
GP]]
Other medical & dental staff (Specialist Registrar, staff grade, SHO)]]
Qualified nursing, midwifery & health visiting staff working mainly in acute sector]]
Qualified nursing, midwifery & health visiting staff working mainly in community sector]]
Qualified scientific, therapeutic & technical staff (incl. eg healthcare scientists, therapists, pharmacists)]]
Qualified ambulance staff]]
Support staff]]
Senior managers & managers]]
GP practice staff]]
Other admin. staff]]

Please think of one occasion during the past two weeks when you needed information related specifically to clinical decisions and then answer the following questions.

1. Why did you need the information?

For direct patient care	[]
For clinical governance/guideline development	[]
For audit	[]
For service development & planning	[]
For legal/ethical issues	[]
For personal research	[]
For research (funded)	[]
Continuing Professional Development related	[]
For personal interest	[]
For teaching/supervision	[]
Other	[]

2. What type of information did you need?

[illegible][illegible]

5. Were you successful in obtaining the information?

26

Partly – information incomplete []
 Partly – time restraints/ will try again []
 Not at all []

6. What was the immediate impact of the information provided on your knowledge?

Relevant	<input type="checkbox"/>	<input type="checkbox"/>
Accurate	<input type="checkbox"/>	<input type="checkbox"/>
Current	<input type="checkbox"/>	<input type="checkbox"/>
Refreshed your memory of detail/facts	<input type="checkbox"/>	<input type="checkbox"/>
Found little or nothing of clinical value	<input type="checkbox"/>	<input type="checkbox"/>
Provided new knowledge	<input type="checkbox"/>	<input type="checkbox"/>
Substantiated prior knowledge/belief	<input type="checkbox"/>	<input type="checkbox"/>
Better informed clinical decisions/contributed to higher quality of care	<input type="checkbox"/>	<input type="checkbox"/>
Contributed to higher quality of care	<input type="checkbox"/>	<input type="checkbox"/>
Will share information with colleagues	<input type="checkbox"/>	<input type="checkbox"/>
Saved time	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

7. Did you ask the librarian/Strategic Health Evidence Manager to search for you instead, or in addition to your own searching?

Save time	[]
Improve the amount/quality of relevant information found	[]
Other	[]

8. If you searched yourself, how long did the search take overall?

9. How might the information you obtained contribute now (or in the future) to your clinical decisions?

Choice of diagnostic test(s)	[[
Choice of drug therapy(ies)	[[

[illegible][illegible]

28

Appendix 3 Interview schedule

IMPACT STUDY OF LIBRARY SERVICES ON PATIENT CARE

Background

This study is funded/supported by [insert details].

We need your help with this audit on the impact of health library services. We are surveying a sample of health professionals (randomly selected – or state mechanism of selection). We would like to know more about your own information needs and how information supplied directly or indirectly through the library services helps you with activities related to patient care.

The interview schedule is taken from a toolkit for health library services throughout the UK

Why you have been chosen, and how to obtain further feedback....

You have been chosen by [explain mechanism of selection, percentage used etc].

All the data provided by the participants will be analysed and presented in a report [give details on how the reporting will be done]. If you wish a copy of the report [give details about the reporting and how to obtain a copy of any publication].

Anonymity

The interviews will be conducted according to the normal research ethics guidelines. Any information you provide will remain confidential. It will be kept securely, and only as long as necessary for the analysis and reporting. Any direct quotes will be used very selectively and will be non-attributable. You may, of course, obtain a copy on the interview [transcript/notes] for verification of the information provided.

Informed Consent Form will be sent to you for signing.

Explain recording method

Any questions

[illegible]

Job title/position

Doctor – specify	Nurse - specify	AHP/Therapist/Scientist - specify	Manager
Admin Other			

Please recall a recent occasion when you had to check some information, look something up, or ask someone – for a query that was related to patient care. The query could be a direct patient care query, or related to your own continuing professional development or for research.

1 Why did you need this information?

Interviewer prompt: topic? Reason for search?

2 Where did you carry out the search?

Interviewer prompt: Library, office, home, other

3. Where did you look, and who did you ask?

Interviewer prompt: What sources or services? Websites? Sources/Resources not in library?

4. What information did you find?

Interviewer prompt: Was that what you were expecting to find? What were you expecting to find? Any problems?

5. How would you, or did you assess the accuracy of the information?

Interviewer prompt: confirming prior suspicions, confidence placed in information

6. Did the information help in making a) an immediate decision; and/or b) would it help with future decisions?

Interviewer prompt: soon, immediately, in the future?

7. When did you call a halt to the searching?

Interviewer prompt: Completed the search? Find the information you wanted, still looking? Success rate?

8. Did you –or will you – share the information with others?

Interviewer prompt: Colleague, patient, other

9. How did, or how might the information contribute to improved quality and safety of patient care? Any impact on the costs of patient care?

Interviewer prompt (select appropriate prompt)

- diagnosis (e.g. avoiding additional tests, or referral)
- therapy (e.g. confirming that selected therapy was safe, cost-effective, risks avoided)
- legal/ethical (e.g. avoiding possible problems with negligence, ensuring quality of care for patients and carers)
- patient care pathway (e.g. ensuring that time costs minimized for patients and staff)

10. Do you usually do your own searching for information?

Interviewer prompt : Do you sometimes/always ask the librarian/other, if so why?

11. What are your perceptions of the contribution of the library service to this search?

Interviewer prompt: Are there any changes you would like to see which would suit you?

NB The schedule may be sent to participants with or without the interviewer prompts.

Toolkit version October 07 (not formatted)